SOME NEMATODE PARASITES FROM AUSTRALIAN HOSTS.

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SUMMARY

Four species are described as new, and amplified descriptions are given of six other species. The following are included: *Capillaria miniopterae* n. sp. (*Miniopterus blepotis*); *Amidostomum biziurae* Johnston & Mawson (*Biziura lobata*); *Nicollina echidnae* Baylis and *N. cameroni* n. sp. (*Tachyglossus aculeata*); *Nycteridostrongylus uncicollis* Baylis and *Molinostrongylus dollfusi* n. sp. (*Miniopterus blepotis*); *Austrostrongylus thylogale* Johnston & Mawson (*Setonix brachyura*); *Pharyngodon australis* Johnston & Mawson (*Tiliqua scincoides*); *Porrocaecum* (*Laymanicaecum*) sp., immature (*Emusium balloti*); *Amplicaecum mackerrasae* nom. nov. syn. *Ophidascaris varani* Johnston & Mawson (*Varanus varius*); *Ophidascaris* sp. (*Amphibolurus barbatus*); *Hedruris longispicula* n. sp. (*Lygosoma challengeri*); *Abbreviata bancrofti* (Irwin-Smith) (*Aspidites melanocephalus*).

LIST OF PARASITES ARRANGED UNDER THEIR HOSTS

Amusium balloti Bernardi. Shark Bay, W.A. *Porrocaecum* (*Laymanicaecum*) sp.

Hemiscyllium ocellatum Bonnaterre. Low Is., Qu. *Proleptus australis* Baylis.

Lygosoma challengeri Boulenger. Springbank, Qu. *Hedruris longispicula* n. sp.

Varanus varius Shaw. Mt. Nebo, Qu. *Amplicaecum mackerrasae* nom. nov.

Aspidites melanocephalus Krefft. Cairns, Qu. *Abbreviata bancrofti* (Irwin-Smith).

Amphibolurus barbatus Cuvier. West Burleigh. *Polydelphis* sp.

Tiliqua scincoides Shaw. Brisbane, Qu. *Pharyngodon australis* Johnston and Mawson.

Biziura lobata Shaw. Pumong, S.A. *Amidostomum biziurae* Johnston and Mawson.

Tachyglossus aculeata (Shaw and Nodder). Kangaroo Island, S.A.: *Nicollina echidnae* Baylis; *N. cameroni* n. sp.; Glen Davis, N.S.W.: *Nicollina echidnae* Baylis.

Setonix brachyura Quoy and Gaimard. Rottnest Island, W.A. *Austrostrongylus thylogale* Johnston and Mawson.

Miniopterus blepotis Temminck. Naracoorte, S.A.: *Nycteridostrongylus uncicollis* Baylis, *Molinostrongylus dollfusi* n. sp. Canungra, Qu.: *Capillaria miniopterae* n. sp., *Nycteridostrongylus uncicollis* Baylis, *Molinostrongylus dollfusi* n. sp.

Capillaria miniopterae n. sp.

(Figs. 1-3)

Four female and four male worms were taken from the stomach of *Miniopteris blepotis* from Canungra, Queensland.

The males are 8·0-8·3 mm. long, the females 11·1-14·4 mm. The body diameters are, in the male and female respectively, at the head 6μ, 8·3μ; at

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the base of the oesophagus 41-47μ, 61μ; at the widest part of the body 35·5μ, 88-100μ. The ratio of oesophageal to intestinal regions is as 1:1·9-2·1 in the female and 1:1·6 in the male.

The eggs are about 50μ by 25μ. The vulva lies close behind the end of the oesophagus and its position is marked by a large tubular flap of the cuticle. The anus in the female is 20μ from the rounded posterior end.

In the male there are two lateral bursal lobes each with a double-headed bursal ray. Prebursal lateral alae are present. A spicule is apparently absent, or is so lightly cuticularised as to be invisible; the sheath does not project from the body in any specimen; it is not spinose and appears to be voluminous and transversely striated.

The species differs from others from bats in which preanal alae in the male have been described, in the absence of spicules and in having a nonspinous sheath, and in the absence of bacillary bands in the cuticle.

Amidostomum biziurae Johnston and Mawson

(Figs. 4-10)

This species was first described from a single female specimen. A number of males and females have now been obtained from the type host, *Biziura lobata*, in which they occurred in considerable numbers from under the lining of the gizzard in each of two birds examined. The species has been distinguished from others of the genus by the presence of anterior projections around the mouth, and by the nature of the cuticle.

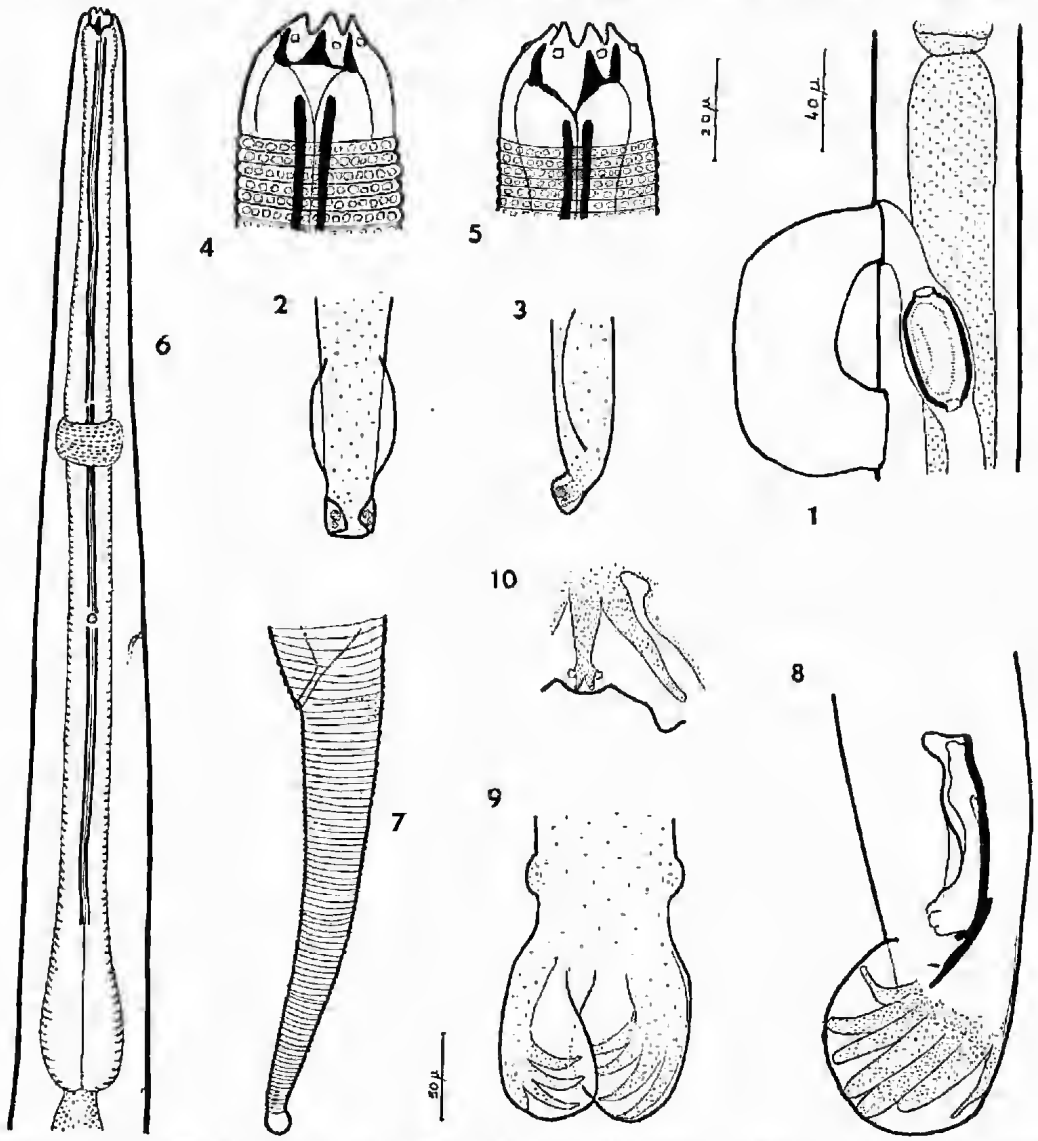
The length of the males is 7·1-8·1 mm., that of the females 9·4-11·5 mm. The cuticle is annulated, each annule being formed of a row of coarse bosses of more or less equal size; these latter are discontinued in the lateral lines and on the tail of the female. Underneath this outer layer the cuticle is longitudinally striated, but these striae are set obliquely over most of the body, running towards the lateral lines. The anterior end of the worm is rounded and the cuticle not inflated; around the mouth is a ring of six small triangular cuticular outgrowths. Six cephalic papillae are distinct. No epaulette-like structures are present, unless these are represented by the ring of cuticular outgrowths.

The buccal capsule is strongly built and measures in the female 15μ external, and 12μ internal, diameter, and 7-8μ in length. The large dorsal tooth is not noticeably recurved. Other teeth if present are insignificant. The oesophagus is 530-620μ long in the male, 600-680μ in the female; it is surrounded by the nerve ring a little in front of its mid-length, and shortly behind this, at almost the same level, are the excretory pore and the minute cervical papillae. In a male in which the oesophagus is 590μ long, the nerve ring lies 280μ, the cervical papillae at 340μ, and the excretory pore at 345μ, from the anterior end; in a female in which the oesophagus is 610μ long these distances are respectively 300μ, 350μ, and 350μ. The oesophagus is lined by several long thick cuticularised bands, referred to by some authors as triturating rods, and these are broken (each possibly projecting as a small tooth) just in front of the nerve ring, where the oesophagus is very slightly swollen. The oesophagus widens slightly in its posterior third and ends in an elongate bulb, into which the triturating rods do not enter.

The female tail, 210-240μ long, is strongly striated, though not mammillated, and ends in an unstriated bulb. The distance of the vulva from the posterior end of the body is 1/4·4-1/4·9 of the total body length. The vulva itself is a wide slit. The eggs are 70-75μ by 42-45μ.

The spicules are 115-130μ long. Each ends in two points of almost equal length, of these the dorsal, sometimes shorter, is the narrower, and the other

wide and membranous. The gubernaculum is 70μ long. A pair of lateral prebursal papillae are present. The bursa is infolded along the outer edge of the lateral lobes so that the tips of the rays are hard to see. A small dorsal lobe is present. The arrangement of the lobes and rays is shown in Figs. 8, 9 and 10.



Figs. 1-10. Figs. 1-3, *Capillaria miniopterae*. 1, vulvar region of female; 2, ventral, and 3, lateral, views of posterior end of male. Figs. 4-10, *Amidostomum bizlurae*. 4, dorsal, and 5, lateral, views of head; 6, oesophageal region; 7, tail of female; 8, posterior end of male; 9, ventral view of bursa; 10, dorsal ray. Figs. 1, 2, 3 and 8 to same scale; Figs. 4 and 5 to same scale; Figs. 6, 7, 9 and 10 to same scale.

The genus Nicollina Baylis, 1930

Baylis in 1930 (p. 17) described two species of a new genus from echidnas. He stated that neither of them appeared to be that recorded (unnamed) by Nicoll (1914), because Nicoll described the worms as retaining their coiled

shape in hot alcohol, whereas those of Baylis were not coiled. Cameron in 1931 (p. 153) added another species to the genus, from a marsupial *Sarcophilus harrissi*, and stated that this species assumes the tightly coiled habit when preserved.

Of two echidnas recently dissected in this department, only one was parasitised, and this had two species, one coiled tightly in a long spiral and the other loosely curved. The latter are identified with one of the species described by Baylis, but the former appears to be so far undescribed, and may be that recorded by Dr. Nicoll.

Nicollina echidnae Baylis, 1930

(Figs. 11-12)

A number of specimens were obtained from *Tachyglossus aculeata* from Kangaroo Island. Six of each sex were measured. The specimens agree in most points with those described from echidnas from Queensland. The males are about the same size, the females rather longer, 5·2-6·5 mm. and 6·7-8·1 mm. long respectively. The body bears one lateral ala as described by Baylis and the cuticle posterior to the cephalic inflation is longitudinally as well as transversely striated; it is, however, raised into broken longitudinal crests, of which there are about two at the anterior end and more in the wider part of the body.

The eggs are 30-35μ by 70-80μ, whereas those measured by Baylis are 55-75μ by 30-33μ. These are the only points in which the new specimens differ from the description given by Baylis. The spicule shape and length (340-390μ) and the dorsal ray of the bursa, are exactly as described. It is possible that the Queensland specimens were younger and the longitudinal crests were not developed.

The mouth is surrounded by six prominent lips, not figured or described by Baylis.

Nicollina cameroni n. sp.

(Figs. 13-16)

A large number of specimens were taken from *Echidna aculeata* from Kangaroo Island. In the closely coiled habit of the body the species resembles *N. sarcophili* Cameron, but it differs from this species in the presence of two lateral alae and in the shape of the spicules and of the dorsal ray. It is distinguished from *N. echidnae* Baylis by the size of the dorsal tooth, the absence of marked longitudinal crests, the presence of two lateral alae, the spicule length and the shape and the coiled habit of the body, the last being distinct in both living and fixed worms. The presence of the two lateral alae and the exact shape of the spicules do not agree with the original description of the genus, but it is thought that the species nevertheless belongs among *Nicollina* species.

The males are 4·5-5·2 mm. long, the females 6·2-7·0 mm. The inflated nuchal cuticle is coarsely striated and extends 95-115μ from the anterior end of the worm. The succeeding cuticle is strongly but closely striated, and in some parts of some specimens is finely rugose. There is some appearance of longitudinal banding, in that the striae are less obvious at intervals, but the cuticle is not raised into crests as in *N. echidnae*. The six lips are distinct. The buccal capsule is well cuticularised, and the tooth is small, lying at the entrance to the oesophagus. The oesophagus widens only very slightly at the posterior end; it is 340-440μ long in the male, 450-490μ in the female.

The female tail is 140-150μ long with a terminal spine and two small subterminal prominences. The vulva is 700-750μ from the posterior end; the uteri are opposed; the eggs are 70-77μ by 37-38μ.

The bursa is particularly difficult to unroll, and its dorsal region is obscured by granular inclusions; a distinct dorsal lobe is absent. The arrangement of the bursal rays is shown in Figs. 15-16; the dorsal ray resembles that of *N. echidnae*, except that the first branches are longer. In some specimens there seems to be three final branches instead of two, but this appearance may be due to the granular nature of the bursa. The spicules are 400-530μ long, slender and needle-like, without alae. The tips are different, however, the right-hand one ending in a ball point and the left-hand one in a simple point. A lightly cuticularised elongate gubernaculum is present.

Nycteridostrongylus uncicollis Baylis, 1930

(Figs. 17-19)

Five adult worms were taken from *Miniopteris blepotis* from Naracoorte, South Australia, and seven males, two females, and three immature males, from the same host specimens from Canungra, Queensland.

The adults, from the small intestine of the host, agree very well with those described by Baylis. The measurements are as follows: Length of males 4·5-6·3 mm., of females 4·5-6·5 mm.; length of cuticular inflation 35-70μ; length of oesophagus 350-500μ in both sexes, with the nerve ring 150-155μ from the anterior end and the cervical papillae and excretory pore at the same level. The female tail is 70-80μ long. The spicules are 510-600μ long. In one broken specimen the tips are distinct; they are provided with a striated flange extending from near the proximal end nearly to the tip; the spicule is hollow, more or less cylindrical, and the tip does not appear to be split into several processes, or, if so, these remain closely applied to one another.

The three immature males, probably 4th stage larvae, were from cysts in the mesentery of the host. In the two shortest (2·8, 3·0 mm.), neither oblique cuticular ridges nor cephalic inflation are present, and these are only referred to the species by their association with the third (4·0 mm.), apparently slightly older, specimen (Fig. 19), in which these ridges and the cephalic inflation are distinct. In all three the rudiment of the bursa is present, and in the longest there is some sclerotisation of the spicule.

Austrostrongylus thylogale Johnston and Mawson, 1940

From *Setonix brachyura*, Rottnest Island, Western Australia.

Mr. Shelley Barker of the Zoology Department of the University of Western Australia, who collected these specimens, states that the species is exceedingly common in this host, up to 6000 worms having been collected from one animal.

The specimens are larger than those recorded from *Thylogale eugenii* from Kangaroo Island, but the proportions and appearance are similar. The males are about 6 mm. long, the female up to 7 mm. The spicules are 4·5 mm. long and in most specimens a small oval gubernaculum is visible, 20-30μ long. The eggs are also larger, 90μ by 45μ.

It is possible that the difference in size of the worms from the two localities is constant and connected with the isolation of each on an off-shore island for a considerable time. There is no other difference between them; it is unnecessary to propose a new species or variety. A gubernaculum is not mentioned in the original description, but it is very small and easily missed in a long preserved specimen; those from Western Australia are newly collected and very well preserved, and even in these the structure is not always clear.

Molinostrongylus dollfusi n. sp.

(Figs. 20-24)

From *Miniopteris blepotis* from Canungra, Queensland, and from Naracoorte, South Australia.

This new species is very close to *M. panousi* Dollfus, 1954. It is distinguished from this species by the length of the spicule and by its shape as well as by the presence of a well-developed dorsal lobe on the bursa and by the longer cephalic inflation. The worms from South Australian hosts are smaller than those from Queensland, but are believed to belong to the same species; their measurements follow those of the Queensland ones in parentheses. The drawing are taken from Queensland specimens.

The males are 3·5-3·7 mm. long (2·6-2·9 mm.) and the females 5·0-5·2 mm. (3·4-3·9 mm.). The cuticle is finely striated longitudinally and transversely; the lateral alae start shortly behind the cephalic inflation and extend to the vulva in the female, behind which they are narrower and resemble the other longitudinal bands. In the male they extend almost to the bursa. In addition to the lateral alae there are a number of finer longitudinal ridges, four on each side, in the posterior oesophageal region, and seven on each side further back. They extend to the tail region in both sexes. The cephalic papillae are not distinct. The cephalic inflation is 50-55μ long (48μ) in the male and 60μ (50μ) in the female.

The length of the oesophagus is 300μ (300μ) in the male and 350-360μ (320-330μ) in the female. The nerve ring is 160-170μ (170μ) and the excretory pore 220-230μ (160-170μ) from the head in the male. The cervical papillae are at the same level as the excretory pore.

The female tail ends in five conical processes, three long and two short, and a spike 35μ long. Including the spike, the tail length is 60-70μ (50-55μ). The vulva is not prominent, and lies 1·3-1·5 mm. (0·9-1·0 mm.) from the posterior end of the worm. The eggs are 90-100μ by 45-50μ in the South Australian specimens; none were present in those from Queensland.

The spicules in all specimens have a very distinct and constant curvature when seen in lateral view (Fig. 22). The anterior end of the gubernaculum is bent dorsal at right angles to the longitudinal axis of the posterior, longer, part. The spicules are alate, the alae extending along the length of the spicule nearly to the tips, where the spicule bifurcates, ending in two prongs, of which the shorter, more median, is bent back into a hook, and the longer is gently curved. The spicule length is 150-160μ (130-140μ), that of the gubernaculum 50μ (40μ). The lateral lobes of the bursa are lined with hooks, of which the larger ones are postero-dorsal in position and the smaller ones ventral and anterior. The dorsal lobe is well developed and trilobed. The size and position of the rays is best seen in Fig. 23. Prebursal papillae are present.

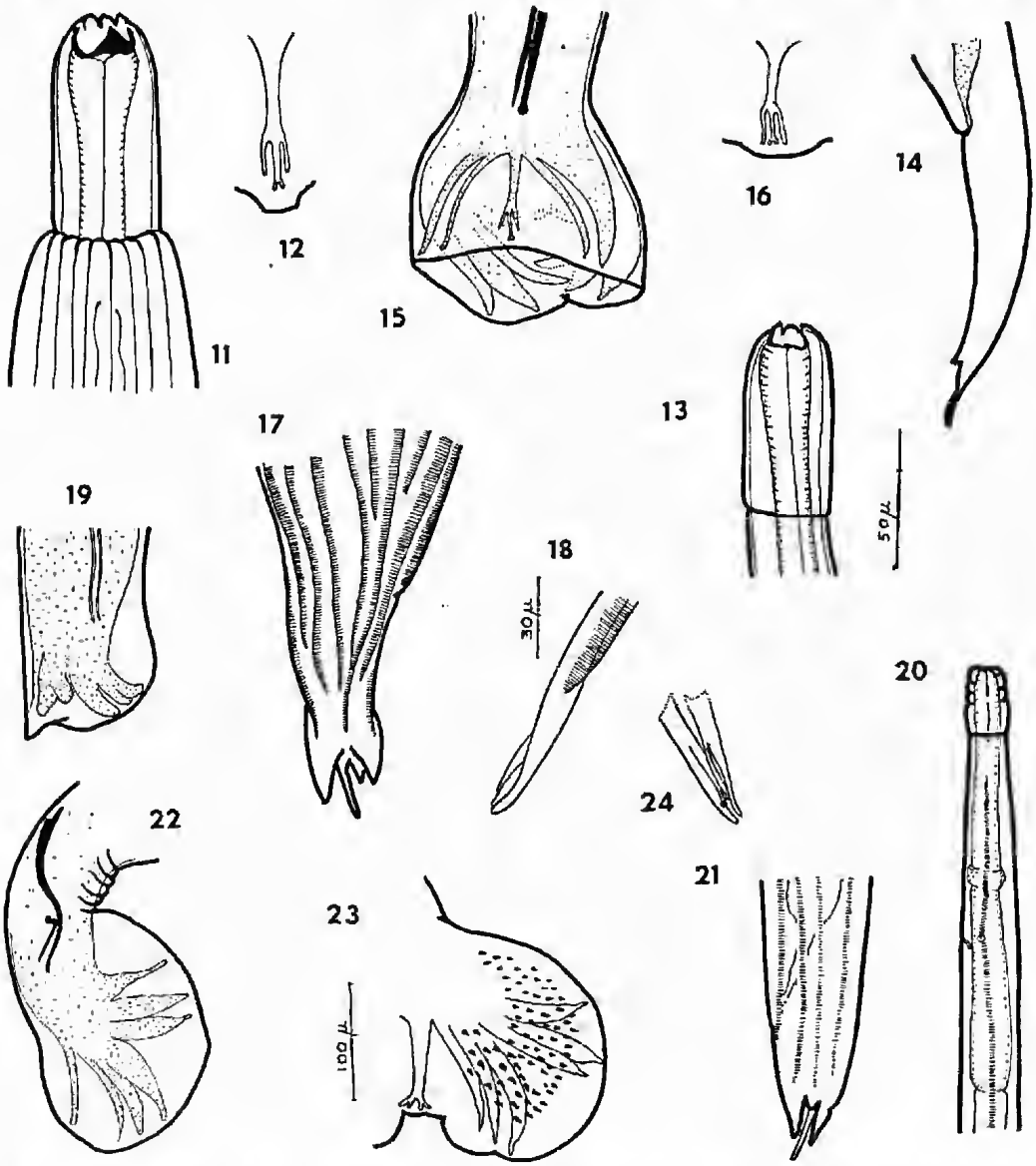
Pharyngodon australis Johnston and Mawson, 1942

From the large intestine of *Tiliqua scincoides*, Brisbane.

The measurements of the new material are as follows: Male—maximum breadth 130-160μ; length of body 1·8-2·3 mm., of oesophagus 200-250μ; distance of excretory pore from anterior end 530-640μ; length of tail spine 40-70μ (less than length of bursa); spicule not chitinised. Female—breadth 230-250μ; length of body 3·2-3·8 mm., of oesophagus 300-400μ; of tail 540-720μ; distance of anterior end from excretory pore 500-550μ, of vulva 600-650μ.

P. australis was separate from *P. tiliquae* Baylis by the size of the body and of the eggs, the position of the excretory pore and vulva in the female, and

the length of the tail spike in the male. In this new material, the size, and the positions of vulva and excretory pore agree with *P. tiliquae*, eggs are absent,



Figs. 11-24. Figs. 11-12, *Nicollina echidnae*. 11, anterior end of male; 12, dorsal ray. Figs. 13-16, *Nicollina cameroni*. 13, anterior end; 14, posterior end of female; 15, bursa; 16, dorsal ray. Figs. 17-19, *Nycteridostrongylus uncicollis*. 17, posterior end of female; 18, distal ends of spicules; 19, posterior end of immature male. Figs. 20-24, *Molinostrongylus dollfusi*. 20, oesophageal region; 21, posterior end of female; 22, posterior end of male; 23, part of bursa; 24, tips of spicules. Figs. 11, 12, 17, 18 and 24 to same scale; Figs. 13, 14, 16 and 21 to same scale; Figs. 15, 20, 22 and 23 to same scale.

and the tail of the male agrees in every particular with *P. australis*. The author, having seen specimens of *P. tiliquae*, prefers to keep *P. australis* separate, at least until larger numbers of specimens are available.

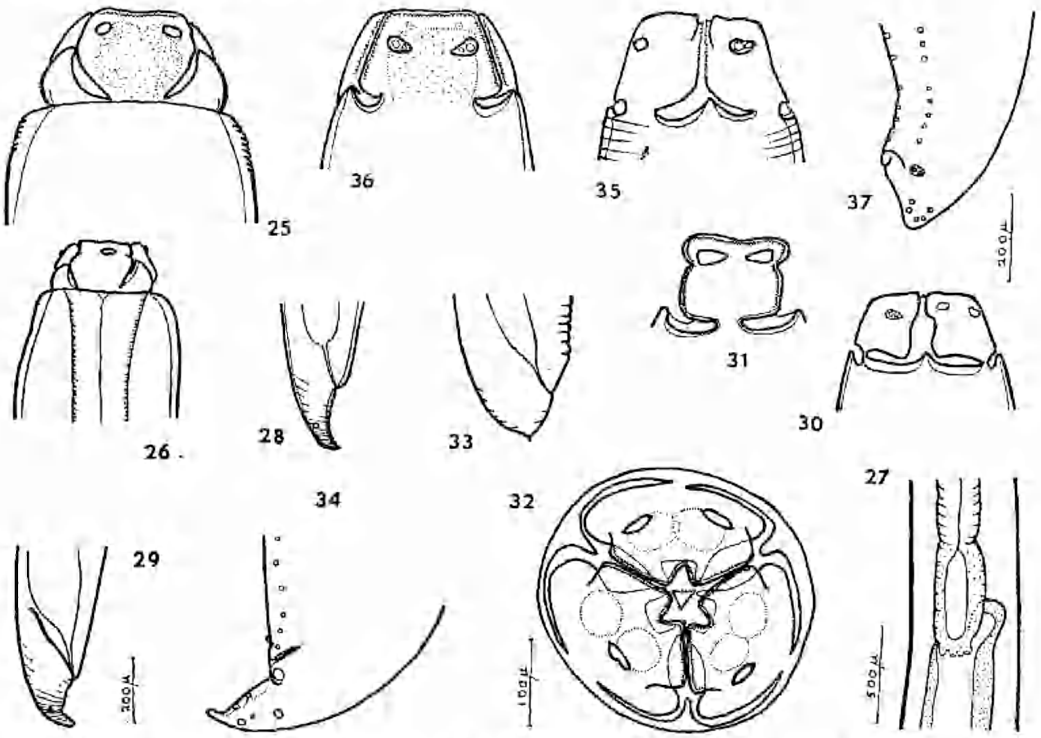
Porrocaecum (Laymanicaecum) sp.

(Figs. 25-29)

From *Emusium balloti*, Shark Bay, Western Australia.

Only larval worms are present, although in at least two the rudiments of the spicules are to be seen. The parasite is apparently common in the scallop beds in this region. It is assumed that the adult will be found in some predator of the mollusc, such as rays, from these waters.

The specimens are allotted to the genus *Porrocaecum* because of the presence of interlabia, elongate oesophageal ventriculus, and intestinal caecum. The subgenera *Porrocaecum* s. str. and *Laymanicaecum* Mozgovoy are separated by the presence or absence of a gubernaculum, a distinction impossible to make in the present case. However, as the former is found as adults in birds, and the latter in elasmobranchs, it is assumed that the scallop parasites belong to (*Laymanicaecum*). Only two species have so far been allotted to the subgenus, *P. laymani* Mozgovoy and *P. pastinaceae* (Rud.) sensu Dollfus and Desportes, 1945 (Campana-Rouget, 1955, 829).



Figs. 25-37. Figs. 25-29, *Porrocaecum* (*Laymanicaecum*) sp. 25, dorsal, and 26, lateral, views of head; 27, region of ventriculus; 28, posterior end; 29, tail of young male. Figs. 30-34, *Amplicaecum mackerrasae*. 30, lateral view of head; 31, dorsal lip; 32, en face view of head; 33, tail of female; 34, tail of male. Figs. 35-37, *Ophidascaris* sp. 35, sublateral, and 36, dorsal, views of head; 37, tail of male. Figs. 25, 32, 35 and 36 to same scale; Figs. 26, 30 and 37 to same scale; Figs. 27, 28, 33 and 34 to same scale.

The length is up to 30-43 mm., the maximum breadth 750μ. The oesophagus is 2·9 mm. long (43 mm. specimen), including the ventriculus which is 600μ long, 250μ wide. The intestinal caecum is very short, no more than half the length of the ventriculus; it may not be visible when viewed so that it is behind

the ventriculus, but when the specimen is rolled over it is clearly seen as a hollow diverticulum. It is possible that the length in the adult is greater.

The shape of the lips is shown in the figures. Each bears a row of teeth which in en face view show a rounded rather than pointed profile. The excretory pore lies at the base of the ventral interlabium. The nerve ring lies 550μ, and cervical papillae 750μ, from the anterior end.

The conical tail is 300μ long. In specimens in which a rudimentary spicule can be seen, it is 400μ long (Fig. 29). At about midlength of the tail, in all specimens, are two large lateral papillae. These are presumably the phasmids, and they are present in the male as well as the female larvae.

Amplicaecum mackerrasae nom. nov.

(Figs. 30-34)

Two female, one male, and several immature specimens were taken from *Varanus varius*, Mt. Nebo, Queensland.

The presence of an intestinal caecum, distinct in whole mounts of the immature specimens and on dissection of the adult, showed that the species belongs to the genus *Amplicaecum*, but in other features closely resembles that described as *Ophidascaris varani* Johnston and Mawson (1947, 23). The type (and only) specimen of *O. varani* has been re-examined and a very thin intestinal diverticulum, half of the length of the oesophagus, found to be present. The species is therefore transferred to *Amplicaecum* but as the specific name in this combination is preoccupied a new name is proposed, *A. mackerrasi*. The length given in the original description, 7 mm., is a misprint for 70 mm.

The species lies with those of the genus in which the vulva is anterior to the midbody, the intestinal caecum about half the length of the oesophagus, i.e. *A. brumpti*, *A. numidica*, *A. cacopi*, and *A. schoutedeni*. It is distinguished from all of these by the greater length of the spicules as well as by other small points.

The length of the male is 67 mm., that of the female 102-108 mm. The shape of the lips and configuration of the head is shown in Figs. 30 to 32. The length of the oesophagus is 6 mm. in the male, 7 mm. in the female, and that of the intestinal caecum is a little less than half this. The nerve ring is at one-eighth and one-ninth of the oesophageal length in the female and male respectively.

The vulva lies in front of the middle of the body, 40-42 mm. from the head. The eggs are about 90μ by 60μ in size. The tail of the female is rounded but ends in a small spine. It is 80μ long, less than the anal breadth.

The conical tail of the male is 60μ long. There are 33 pairs of pre-anal papillae and six pairs of post-anal, arranged as in Fig. 34. The spicules are 1·3 mm. long.

Ophidascaris sp.

(Figs. 35-37)

From *Amphibolurus barbatus*, from West Burleigh, Queensland, in the retroperitoneal tissues.

Only one male is present. This is 56 mm. long; the body tapers in the anterior half, the greatest breadth, 780μ, being behind the mid-length. The lips have well developed dentigerous ridges. The interlabia are very short. The oesophagus is 3·1 mm. long, the nerve ring is at 520μ from the anterior end. The specimen was dissected and no intestinal caecum could be found.

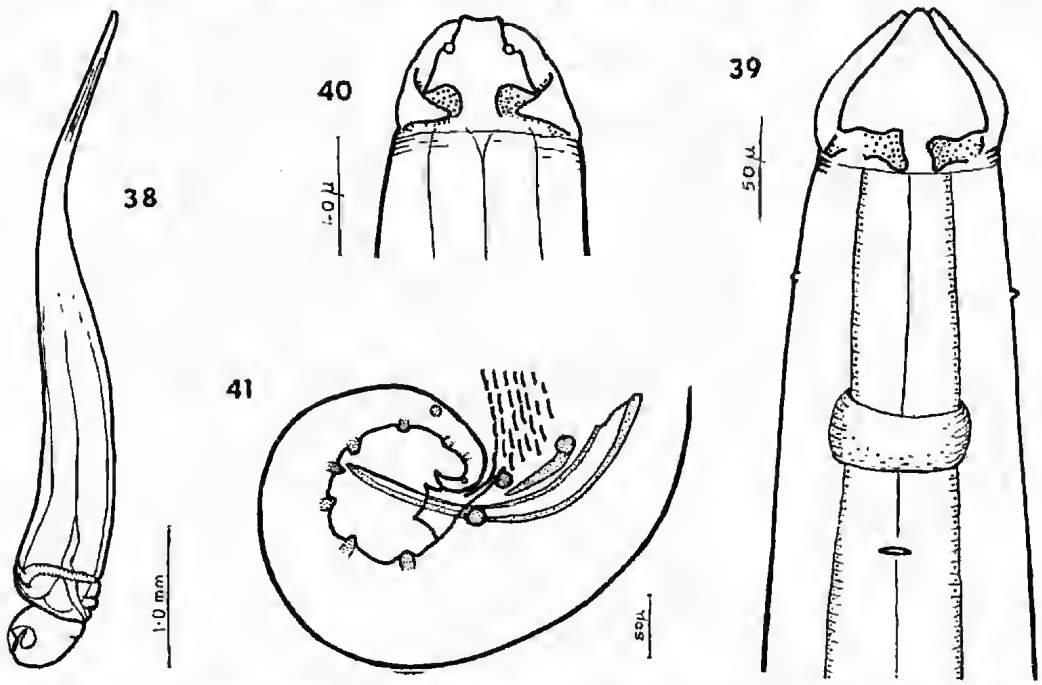
The tail is very short, 150μ, while the anal breadth is 210μ. There are 43 pairs of pre-anal papillae, one pair of double-headed adanal, and five pairs of post-anal, clustered on the second half of the tail. The spicule is 4·38 mm. long; no gubernaculum was seen.

Hedruris longispicula n. sp.

(Figs. 38-41)

From *Lygosoma challengeri*, from Springbank, South Queensland.

The males reach 3·0 mm. in length, 115μ maximum breadth. The females are 4·0-5·0 mm. long, the width of the anterior part of the body (at level of the nerve ring) 130-190μ, and that at the widest part 550-600μ. The cutiele is finely striated transversely and beneath these coarser longitudinal striae are seen, in both sexes. The head is short and there are no balloon-like inflations posterior to the lips. The length of the oesophagus is 550μ in the male, and 900μ in the female, and the distance from the anterior end of the cervical papillae, nerve ring, and excretory pore are respectively 130-140μ, 180-200μ, and 230-260μ in the female, and 150μ, 170μ, and 280μ in the male. The vulva is 750μ from the posterior end of the worm. The eggs are 55μ by 25μ, without lateral protuberances. The anus is 500-550μ from the posterior end.



Figs. 38-41, *Hedruris longispicula*. 38, entire female; 39, head of female; ventral view; 40, head of male, lateral view; 41, tail of male.

In the male the tail is 350μ long and is coiled in two to three rings, for most of which region the ventral surface anterior to the anus bears broken longitudinal ridges. The caudal alae extend from just in front of the anus to near the tip of the tail and support eleven papillae on each side. The spicules are 300μ long. A short (70μ) chitinised bar lying anterior to the spicule appears to be a gubernaculum.

In the shape of the head and lips the species is closest to *H. tiara* Van Cleave & Mueller; it differs from this in the position of the vulva and the length of the spicule. In the female the ratio between the maximum body width and that in the oesophageal region is greater than in any other species, though this may be at least in part due to their being at a more advanced stage of egg-bearing than the types of some other species. The spicules are almost as long as the tail, whereas in only one other species in which the male is described (*H. spinigera* Baylis) is it more than two-thirds of the tail length, and in other species it is half the tail length or less.

Abbreviata bancrofti (Irwin-Smith)

From *Aspidites melanocephalus*, from Cairns.

The type host of the *Abbreviata bancrofti* is an Australian gecko, *Gymnodactylus platurus*, and the species has not been recorded since. The specimens from the snake, one male and two females, agree very closely in characters of the head and tail and reproductive system, with Irwin-Smith's description, and cannot be allotted to any other species. It was pointed out by Chabaud (1956, 41) in his valuable revision of the physalopterans from reptiles that *P. oligopapillata* (Kreis, 1940) is very close to *A. bancrofti*.

The measurements of the new specimens are as follows: Male—18·7 mm. long, oesophagus 2·6 mm. long (a seventh body length), spicules 1·25 mm., and 0·3 mm. long; female—14·7-18·3 mm. long, oesophagus 2·3-2·5 mm. long (a sixth to a seventh body length), distance of vulva from anterior end 3·9-4·5 mm., a quarter of the body length, eggs 43μ by 23-26μ.

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